



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------------------|-----------------------------|
| 10/761,241 | 01/22/2004 | Hiroshi Wada | 248071US0CONT | 2022 |
| 22850 | 7590 | 06/06/2007 | | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | EXAMINER COONEY, JOHN M | |
| | | | ART UNIT 1711 | PAPER NUMBER |
| | | | NOTIFICATION DATE 06/06/2007 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

| | | | |
|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/761,241 | Applicant(s) WADA ET AL. | |
| | Examiner John m. Cooney | Art Unit 1711 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21,26,27,29,31,32,34-36,38-40,43 and 47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 21,26,27,29,31,32,34-36,38-40,43 and 47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4-17-07 has been entered.

Specification

The use of the trademark L-5421 has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21, 26, 27, 29, 31, 32, 34-36, 38-40, 43, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeyasu et al.(5,093,380) in view of Kiamil et al.(5,164,421).

Takeyasu et al. discloses preparations of flexible polyurethane foams, having core densities meeting those of applicants' claims, prepared by mixing and reacting polyols of low-unsaturation and hydroxyl values as claimed which may also contain polymers dispersed within and are prepared using the double metal cyanide catalysts, modified crude MDI as claimed, catalysts, blowing agents, and silicone stabilizers as claimed (see the entire document). Additionally, the polyols and crosslinkers disclosed by Takayasu et al. are inclusive of the crosslinking agents as claimed by applicants.

While Takeyasu et al.'s disclosure may be directed towards closed mold operations, the reference is encompassing of combining and reacting the materials generally, and one would readily envision mixing and reacting the materials in an open state from the referenced teaching taken as a whole. Further, as being directed towards cushioning articles, straight slabstock foam cushions would be the most readily produced articles with shape/molded forms being produced according to design.

Additionally, Takeyasu et al.'s disclosure of prepolymer modified isocyanates is seen to readily envision the prepolymers of applicants' claims. Takeyasu et al. identifies modified crude MDI to be one of their preferred isocyanate functional materials with prepolymer modified products being one of these modifications mentioned (see column 5 lines 39-43). Based on the limited degree of picking in Takeyasu et al.'s teaching, anticipation is evident. Further, as reaction of the isocyanate with OH and to a lesser

Art Unit: 1711

degree NH functional compound is what is meant by prepolymer modified products, anticipation of prepolymers based on OH functional compounds is evident.

Takeyasu et al.'s disclosure of silicon stabilizers is seen to be complete in its disclosure of the stabilizers as now claimed (column 5 lines 64-65, and column 7 lines 21-29). The specific stabilizers of Takeyasu et al. are of the same family of stabilizers generally and specifically and are seen to inherently possess Si contents of 10-50 mass % as is now claimed.

Takeyasu et al. discloses crosslinkers generally as is claimed and having molecular weights of less than 10,000 (see column 4 line 52 – column 5 line 26). Additionally, Takeyasu et al.'s disclosure of the employment of other polyols (column 3 lines 46-50) meet applicants' recitation of crosslinkers of MW's > 4000 as claimed.

The hardness ratios set forth in applicants' new claims are held to be inherent to the teachings of Takeyasu et al. since they are attributed to the make-ups of the products formed.

Takeyasu et al. differ from applicants' claims in that the monol modified prepolymers as claimed are not disclosed. However, Kiamil et al. disclose preparations of polyurethane foams using isocyanates prepared using prepolymeric modified polymeric isocyanates obtained through reaction with polyethylene glycol monomethyl ether for the purpose of capping excess reactive sites and economize product synthesis(see column 1, column 2 lines 5-12 & 61 et seq., and claims 4 and 28). Accordingly, it would have been obvious for one having ordinary skill in the art to have modified the isocyanates of Takeyasu et al. with polyethylene glycol monomethyl ether

Art Unit: 1711

as taught by Kiamil et al. for the purpose of capping reactive sites in the isocyanate functional reactants employed in order to arrive at the process of applicants' claim with the expectation of success in the absence of a showing of new or unexpected results.

Claims 21, 26, 27, 29, 31, 32, 34-36, 38-40, 43, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP-1,022,300 A1 in view of Kiamil et al. (5,164,421).

EP-1,022,300 A1 discloses preparations of flexible polyurethane foams by mixing and reacting polyols of low-unsaturation and hydroxyl values as claimed which may also contain polymers dispersed within and are prepared using the double metal cyanide catalysts, modified crude MDI as claimed, catalysts, blowing agents, and silicone stabilizers as claimed (see the entire document). Additionally, the polyols disclosed by EP-1,022,300 A1 are inclusive of the crosslinking agents as claimed by applicants.

EP-1,022,300 explicitly acknowledges that its procedures may be carried out by a method of spreading a reactive mixture into a mold in an open state (see again paragraph [0083]), and such a disclosure can not be ignored because the reference exemplifies closed molding applications.

Additionally, EP-1,022,300's disclosure of prepolymer modified isocyanates is seen to readily envision the prepolymers of applicants' claims [0077]. Takeyasu et al. identifies modified crude MDI to be one of their preferred isocyanate functional materials with prepolymer modified products being one of these modifications mentioned. Based

Art Unit: 1711

on the limited degree of picking in EP-1,022,300's teaching, anticipation is evident.

Further, as reaction of the isocyanate with OH and to a lesser degree NH functional compound is what is meant by prepolymer modified products, anticipation of prepolymers based on OH functional compounds is evident.

EP-1,022,300's disclosure of silicon stabilizers is seen to be complete in its disclosure of the stabilizers as now claimed ([0094] and Table 3). The specific stabilizers of EP-1,022,300 are seen to inherently possess Si contents of 10-50 mass % as is now claimed.

EP-1,022,300 discloses crosslinkers generally as is claimed and having molecular weights of less than 10,000 ([0075]). Additionally, EP-1,022,300's disclosure of the employment of other polyols ([0074]) meet applicants' recitation of crosslinkers of MW's > 4000 as claimed.

The hardness ratios set forth in applicants' new claims are held to be inherent to the teachings of EP-1,022,300 since they are attributed to the make-ups of the products formed.

EP-1,022,300 differs from applicants' claims in that the monol modified prepolymers as claimed are not disclosed. However, Kiamil et al. disclose preparations of polyurethane foams using isocyanates prepared using prepolymeric modified polymeric isocyanates obtained through reaction with polyethylene glycol monomethyl ether for the purpose of capping excess reactive sites and economize product synthesis(see column 1, column 2 lines 5-12 & 61 et seq., and claims 4 and 28). Accordingly, it would have been obvious for one having ordinary skill in the art to have

modified the isocyanates of EP-1,022,300 with polyethylene glycol monomethyl ether as taught by Kiamil et al. for the purpose of capping reactive sites in the isocyanate functional reactants employed in order to arrive at the process of applicants' claim with the expectation of success in the absence of a showing of new or unexpected results.

As to the density values of applicants' claims, though EP-1,022,300 does not particularly set forth density values as defined by applicants' claims, and its examples emphasize densities slightly higher than those required by applicants' claims, EP-1,022,300 {see paragraph [0078] } does disclose employment of its blowing agent over a wide range of values. As blowing agent amount is known to impact density, it is held that it would have been obvious for one having ordinary skill in the art to have controlled the content of blowing agent as prescribed by EP-1,022,300 within the teachings of EP-1,022,300 for the purpose of controlling density of articles formed in order to arrive at the products and processes of applicants' claims with the expectation of success in the absence of a showing of new or unexpected results. Additionally, it has long been held that where the general conditions of the claims are disclosed in the prior art, discovering the optimal or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233; *In re Reese* 129 USPQ 402 . Further, a prima facie case of obviousness has been held to exist where the proportions of a reference are close enough to those of the claims to lead to an expectation of similar properties. *Titanium Metals v Banner* 227 USPQ 773. (see also MPEP 2144.05 I) Similarly, it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272,205 USPQ 215 (CCPA 1980)

The following arguments set forth previously regarding the rejections under 35 USC 103 are maintained:

Applicants' arguments {received 4-10-06} have been considered, but rejections are maintained for the reasons set forth above. Applicants' showings of unexpected results have been considered, but new or unexpected results attributable to the differences indicated in the rejection that are commensurate in scope with the scope of the claims as they currently stand have not been demonstrated.

Regarding the molding limitations, in addition to the remarks set forth in the above rejections, it is maintained that although Takeyasu et al. may highlight a closed mold in one embodiment of their disclosure, its full disclosure readily envisions simple mixing in an open area, and such a limitation is not seen to be a distinction over what is fully taught by the teachings of Takeyasu et al. It is maintained that EP-1,022,300's disclosure of open mold techniques is sufficient anticipatory disclosure of this element of applicants' invention. The molding operations of the instant concern are addressed in the rejections above, and distinction in a patentable sense has not been identified by applicants' arguments. The stabilizers and crosslinkers of applicants' claims are not seen to be differences between applicants' claims and the teachings of the prior art for the reasons indicated in the rejections above, and applicants' arguments have not identified differences in the patentable sense which refute the positions set forth above. Whether the stabilizers of the instant concern are better suited to rigid or flexible foam applications does not negate the prior arts disclosure of the stabilizers meeting the criteria of applicants' claims. The crosslinkers of the claims are maintained to be met by the other polyols of the referenced teachings. Additionally, the crosslinkers of applicants' claims do not have the required elements discussed in applicants' reply.

Applicants' latest arguments {received 10-13-06} have been considered. However, rejection is maintained for all of the reasons set forth, again, above. Takeyasu et al., in their examples provide for core density values meeting those set forth by applicants' amended claims, and applicants' arguments do not negate or refute the teachings of this referenced prior art. The rejection over EP-1,022,300 in view of Kiamil et al. addresses the new density limitations to applicants' claims, and applicants' arguments do not negate or refute examiner's position of obviousness as set forth above. Applicants' further assertions as to differences between the referenced teachings and the instant claims have been considered but do not negate or refute examiner's positions of obviousness as set forth above.

As to applicants' arguments that new or unexpected results have been shown, it is maintained that applicants' showings of results are insufficient for the reasons indicated above. Further, it is noted that the following should be considered when considering showings of results:

Art Unit: 1711

Result Must Compare to Closest Prior Art:

Where a definite comparative standard may be used, the comparison must relate to the prior art embodiment relied upon and not other prior art – *Blanchard v. Ooms*, 68 USPQ 314 – and must be with a disclosure identical (not similar) with that of said embodiment: *In re Tatincloux*, 108 USPQ 125.

Results Must be Unexpected:

Unexpected properties must be more significant than expected properties to rebut a prima facie case of obviousness. *In re Nolan* 193 USPQ 641 CCPA 1977.

Obviousness does not require absolute predictability. *In re Miegel* 159 USPQ 716.

Since unexpected results are by definition unpredictable, evidence presented in comparative showings must be clear and convincing. *In re Lohr* 137 USPQ 548.

In determining patentability, the weight of the actual evidence of unobviousness presented must be balanced against the weight of obviousness of record. *In re Chupp*, 2 USPQ 2d 1437; *In re Murch* 175 USPQ 89; *In re Beattie*, 24 USPQ 2d 1040.

Claims Must be Commensurate With Showings:

Evidence of superiority must pertain to the full extent of the subject matter being claimed. *In re Ackerman*, 170 USPQ 340; *In re Chupp*, 2 USPQ 2d 1437; *In re Murch* 175 USPQ 89; *Ex Parte A*, 17 USPQ 2d 1719; accordingly, it has been held that to overcome a reasonable case of prima facie obviousness a given claim must be commensurate in scope with any showing of unexpected results. *In re Greenfield*, 197 USPQ 227. Further, a limited showing of criticality is insufficient to support a broadly claimed range. *In re Lemin*, 161 USPQ 288. See also *In re Kulling*, 14 USPQ 2d 1056.

Applicants' latest arguments have been considered. However, difference is not seen in the selection of molecular weights for the selected crosslinker. The polyols of the above cited prior art are seen to be inclusive of the crosslinkers as defined by the claim. Identifying this claim element as being a "crosslinking agent" does not serve to be distinguishing of this claim element from the polyols of the prior art having the molecular weights and functionalities meeting those of the claims. Additionally, applicants have not established sufficient showing of new or unexpected results

Art Unit: 1711

attributable to differences in their claims that are commensurate in scope with the scope of their claims.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 21, 26, 27, 29, 31, 32, 34-36, 38-40, 43, and 47 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-41 of U.S. Patent No. 6,734,219 in view of Kiamil et al. and Takeyasu et al. U.S. Patent No. 6,734,219 discloses preparations of flexible polyurethane foams which are prepared by mixing and reacting polyols, PMDI, catalysts, and blowing agents. The claims of 6,734,219 differ from applicants' claims in that the monol modified prepolymers as claimed are not disclosed. However, Kiamil et al. disclose preparations of polyurethane foams using isocyanates prepared using prepolymeric modified polymeric isocyanates obtained through reaction with polyethylene glycol monomethyl ether for the purpose of capping excess reactive sites and economize product

Art Unit: 1711

synthesis(see column 1, column 2 lines 5-12 & 61 et seq., and claims 4 and 28).

Accordingly, it would have been obvious for one having ordinary skill in the art to have modified the isocyanates of the claims of 6,734,219 with polyethylene glycol monomethyl ether as taught by Kaimil et al. for the purpose of capping reactive sites in the isocyanate functional reactants employed in order to arrive at the process of applicants' claim with the expectation of success in the absence of a showing of new or unexpected results. The claims of 6,734,219 differ in that they do not specifically disclose other reactive hydroxyl functional materials in their claimed preparations meeting the crosslinkers of applicants' claims. However, Takeyasu et al. discloses crosslinkers generally as is claimed and having molecular weights of less than 10,000 (see column 4 line 52 – column 5 line 26) and employment of other polyols (column 3 lines 46-50) meeting applicants' recitation of crosslinkers of MW's > 4000 as claimed for purposes of providing isocyanate reactive functional groups for chain growth.

Accordingly, it would have been obvious for one having ordinary skill in the art to have modified the isocyanates of the claims of 6,734,219 with crosslinker and other polyol isocyanate reactive materials of Takeyasu et al. for the purpose of providing isocyanate reactive functional groups for chain growth in order to arrive at the process of applicants' claim with the expectation of success in the absence of a showing of new or unexpected results.

As to the density values of the instant claims, it is held that the compositions disclosed by the claims of 6,734,219, based on their disclosed make-up, are

Art Unit: 1711

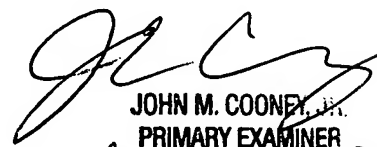
encompassing of the density values now claimed by applicants, and difference based on these claimed density values is not seen to be evident.

Applicants' latest arguments have been considered. However, difference is not seen in the selection of molecular weights for the selected crosslinker. The polyols of the above cited prior art are seen to be inclusive of the crosslinkers as defined by the claim and deficiencies are addressed by secondary references as indicated. Identifying this claim element as being a "crosslinking agent" does not serve to be distinguishing of this claim element from the polyols of the prior art having the molecular weights and functionalities meeting those of the claims. Additionally, applicants have not established sufficient showing of new or unexpected results attributable to differences in their claims that are commensurate in scope with the scope of their claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Cooney whose telephone number is 571-272-1070. The examiner can normally be reached on M-F from 9 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck, can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


JOHN M. COONEY, JR.
PRIMARY EXAMINER
Group 1700